Table 12: IRES Sequences

SEQ ID NO:__ A 519 base pair IRES obtainable from encephelomycarditis virus (EMCV).

```
1     GACGTCGACTAATTCCGGTTATTTTCCACCATATTGCCGTCTTTTGGCAA
          SalI
51    TGTGAGGGCCCGGAAACCTGGCCCTGTCTTCTTGACGAGCATTCCTAGGG
101   GTCTTTCCCCTCTCGCCAAAGGAATGCAAGGTCTGTTGAATGTCGTGAAG
151   GAAGCAGTTCCTCTGGAAGCTTCTTGAAGACAAACAACGTCTGTAGCGAC
201   CCTTTGCAGGCAGCGGAACCCCCCACCTGGCGACAGGTGCCTCTGCGGCC
251   AAAAGCCACGTGTATAAGATACACCTGCAAAGGCGGCACAACCCCAGTGC
301   CACGTTGTGAGTTGGATAGTTGTGGAAAGAGTCAAATGGCTCTCCTCAAG
351   CGTATTCAACAAGGGGCTGAAGGATGCCCAGAAGGTACCCCATTGTATGG
401   GATCTGATCTGGGGCCTCGGTGCACATGCTTTACATGTGTTTAGTCGAGG
451   TTAAAAAACGTCTAGGCCCCCCGAACCACGGGGACGTGGTTTTCCTTTGA
                SalI
501   AAAACACGATGTCGACGTC
```

SEQ ID NO:__ An IRES obtainable from vascular endothelial growth factor (VEGF).

```
1     ACGTAGTCGACAGCGCAGAGGCTTGGGGCAGCCGAGCGGCAGCCAGGCCC
          SalI
51    CGGCCCGGGCCTCGGTTCCAGAAGGGAGAGGAGCCCGCCAAGGCGCGCAA
101   GAGAGCGGGCTGCCTCGCAGTCCGAGCCGGAGAGGGAGCGCGAGCCGCGC
151   CGGCCCCGGACGGCCTCCGAAACCATGGTCGACACGTA
                                    SalI
```

SEQ ID NO:__ A 5'UTR region of HCV.

```
1
      GCCAGCCCCCTGATGGGGGCGACACTCCGCCATGAATCACTCCCCTGTGAGGAACTACTG
61
      TCTTCACGCAGAAAGCGTCTAGCCATGGCGTTAGTATGAGTGTCGTGCAGCCTCCAGGAC
121   CCCCCCTCCCGGGAGAGCCATAGTGGTCTGCGGAACCGGTGAGTACACCGGAATTGCCAG
181   GACGACCGGGTCCTTTCTTGGATTAACCCGCTCAATGCCTGGAGATTTGGGCGTGCCCCC
241   GCAAGACTGCTAGCCGAGTAGTGTTGGGTCGCGAAAGGCCTTGTGGTACTGCCTGATAGG
301   GTGCTTGCGAGTGCCCCGGGAGGTCTCGTAGACCGTGCACC (341)
```

SEQ ID NO:__ A 5'UTR region of BiP SEQ ID NO:4

```
1
      CCCGGGGTCACTCCTGCTGGACCTACTCCGACCCCCTAGGCCGGGAGTGAAGGCGGGACT
61
      TGTGCGGTTACCAGCGGAAATGCCTCGGGGTCAGAAGTCGCAGGAGAGATAGACAGCTGC
121   TGAACCAATGGGACCAGCGGATGGGGCGGATGTTATCTACCATTGGTGAACGTTAGAAAC
181   GAATAGCAGCCAATGAATCAGCTGGGGGGGCGGAGCAGTGACGTTTATTGCGGAGGGGGC
241   CGCTTCGAATCGGCGGCGGCCAGCTTGGTGGCCTGGGCCAATGAACGGCCTCCAACGAGC
301   AGGGCCTTCACCAATCGGCGGCCTCCACGACGGGGCTGGGGGAGGGTATATAAGCCGAGT
361   AGGCGACGGTGAGGTCGACGCCGGCCAAGACAGCACAGACAGATTGACCTATTGGGGTGT
421   TTCGCGAGTGTGAGAGGGAAGCGCCGCGGCCTGTATTTCTAGACCTGCCCTTCGCCTGGT
481   TCGTGGCGCCTTGTGACCCCGGGCCCCTGCCGCCTGCAAGTCGAAATTGCGCTGTGCTCC
541   TGTGCTACGGCCTGTGGCTGGACTGCCTGCTGCTGCCCAACTGGCTGGCAAGATG (595)
```

SEQ ID NO:__ A 5'UTR of PDGF SEQ ID NO:5

```
1
      GTTTGCACCTCTCCCTGCCCGGGTGCTCGAGCTGCCGTTGCAAAGCCAACTTTGGAAAAA
61
      GTTTTTTGGGGGAGACTTGGGCCTTGAGGTGCCCAGCTCCGCGCTTTCCGATTTTGGGGG
121   CTTTCCAGAAAATGTTGCAAAAAAGCTAAGCCGGCGGGCAGAGGAAAACGCCTGTAGCCG
181   GCGAGTGAAGACGAACCATCGACTGCCGTGTTCCTTTTCCTCTTGGAGGTTGGAGTCCCC
241   TGGGCGCCCCCACACCCCTAGACGCCTCGGCTGGTTCGCGACGCAGCCCCCCGGCCGTGG
301   ATGCTGCACTCGGGCTCGGGATCCGCCCAGGTAGCCGGCCTCGGACCCAGGTCCTGCGCC
361   CAGGTCCTCCCCTGCCCCCCAGCGACGGAGCCGGGGCCGGGGGCGGCGGCGCCGGGGGCA
421   TGCGGGTGAGCCGCGGCTGCAGAGGCCTGAGCGCCTGATCGCCGCGGACCTGAGCCGAGC
481   CCACCCCCCTCCCCAGCCCCCCACCCTGGCCGCGGGGGCGGCGCGCTCGATCTACGCGTC
541   CGGGGCCCCGCGGGGCCGGGCCCGGAGTCGGCATG (575)
```

Table 13: Literature References For IRES

IRES Host	Example	Reference
Picornavirus	HAV	Glass et al., 1993. Virol 193:842-852
	EMCV	Jang & Wimmer, 1990. Gene Dev 4:1560-1572
	Poliovirus	Borman et al., 1994. EMBO J 13:3149-3157
HCV and pestivirus	HCV	Tsukiyama-Kohara et al., 1992. J Virol 66:1476-1483
	BVDV	Frolov I et al., 1998. RNA. 4:1418-1435
Leishmania virus	LRV-1	Maga et al., 1995. Mol Cell Biol 15:4884-4889
Retroviruses	MoMLV VL30 (Harvey murine sarcoma virus)	Torrent et al., 1996. Hum Gene Ther 7:603-612
	REV	Lopez-Lastra et al., 1997. Hum Gene Ther 8:1855-1865
Eukaryotic mRNA	BiP	Macejak & Sarnow, 1991. Nature 353:90-94
	antennapedia mRNA	Oh et al., 1992. Gene & Dev 6:1643-1653
	FGF-2	Vagner et al., 1995. Mol Cell Biol 15:35-44
	PDGF-B	Bernstein et al., 1997. J Biol Chem 272:9356-9362
	IGFII	Teerink et al., 1995. Biochim Biophys Acta 1264:403-408
	eIF4G	Gan & Rhoads, 1996. J Biol Chem 271:623-626
	VEGF	Stein et al., 1998. Mol Cell Biol 18:3112-3119; Huez et al., 1998. Mol Cell Biol 18:6178-6190

Table 14: TRE Sequences

Nucleotide sequence of a human uroplakin II 5' flanking region. Position +1 (the translational start site) is denoted with an asterisk. SEQ ID NO:__ (number 1 of

SEQ ID NO:__ corresponds to position -2239 with respect to the translational start site).

```
TCGATAGGTA CCCACTATAG GGCACGCGTG GTCGACGGCC CGGGCTGGTC
1                                                   50

TGGCAACTTC AAGTGTGGGC CTTTCAGACC GGCATCATCA GTGTTACGGG
51                                                 100

GAAGTCACTA GGAATGCAGA ATTGATTGAG CACGGTGGCT CACACCTGTA
101                                                150

ATCCCAACAC TCTGGGAGGC CAAGGCAGGT GGATCACTTG TGGTCAGGAG
151                                                200

TTTGAGACCA GCCTGGCCAA CATGGTGAAA CCTCATCTCT ACTAAAAATA
201                                                250

CAAAAATTAG CTGGGAATGG TGGCACATGC CTATAATCCC AGTTACTCAG
251                                                300

GAGGCTGAGG CAGGAGAATC ATTTGAACCT GGGAGGCAGA GGTTGCAGTG
301                                                350

AGCCGAGATC ACGCCACTGC ACTCCAGCCT GGGTGACACA GCGAGACTCT
351                                                400

GTCTCAAAAA AAAAAAAATG CAGAATTTCA GGCTTCACCC CAGACCCACT
401                                                450

GCATGACTGC ATGAGAAGCT GCATCTTAAC AAGATCCCTG GTAATTCATA
451                                                500

CGCATATTAA ATTTGGAGAT GCACTGGCGT AAGACCCTCC TACTCTCTGC
501                                                550

TTAGGCCCAT GAGTTCTTCC TTTACTGTCA TTCTCCACTC ACCCCAAACT
551                                                600

TTGAGCCTAC CCTTCCCACC TTGGCGGTAA GGACACAACC TCCCTCACAT
601                                                650

TCCTACCAGG ACCCTAAGCT TCCCTGGGAC TGAGGAAGAT AGAATAGTTC
651                                                700

GTGGAGCAAA CAGATATACA GCAACAGTCT CTGTACAGCT CTCAGGCTTC
701                                                750

TGGAAGTTCT ACAGCCTCTC CCGACAAAGT ATTCCACTTT CCACAAGTAA
751                                                800

CTCTATGTGT CTGAGTCTCA GTTTCCACTT TTCTCTCTCT CTCTCTCTCT
801                                                850
```

CAACTTTCTG AGACAGAGTT TCACTTAGTC GCCCAGGCTG GAGTGCAGGG
851 900

GCACAATCTC GGCTCACTGC AACCTCCACC TCCTGGGTTC AAGTGTTTCT
901 950

CCTGTCTCAG CCTCCCGAGT AGCTGGGATT ACAGGCACAC ACCACCGCGT
951 1000

TAGTTTTTGT ATTTTTGGTA GAGATGGTGT TTCGCCATAT TGGCCAGGCT
1001 1050

GATCTCGAAC TCCTGACCTC AGGTGATCCG CCCACCTCGG CCTCCCAAAG
1051 1100

TGCTGGGATT ACAGGCATGA GCCACCACGC CCGGCTGATC TCTTTTCTAT
1101 1150

TTTAATAGAG ATCAAACTCT CTGTGTTGCC TAGGCTGGTC TTGAACTCCT
1151 1200

GGCCTCGAGT GATCCTCCCA CCTTGGCCTC CCAAAGTGTT GAGATTACAG
1201 1250

GCATGAGCCA CTGTGCCTGG CCTCAGTTCT ACTACAAAAG GAAGCCAGTA
1251 1300

CCAGCTACCA CCCAGGGTGG CTGTAGGGCT ACAATGGAGC ACACAGAACC
1301 1350

CCTACCCAGG GCCCGGAAGA AGCCCCGACT CCTCTCCCCT CCCTCTGCCC
1351 1400

AGAACTCCTC CGCTTCTTTC TGATGTAGCC CAGGGCCGGA GGAGGCAGTC
1401 1450

AGGGAAGTTC TGTCTCTTTT TCATGTTATC TTACGAGGTC TCTTTTCTCC
1451 1500

ATTCTCAGTC CAACAAATGG TTGCTGCCCA AGGCTGACTG TGCCCACCCC
1501 1550

CAACCCCTGC TGGCCAGGGT CAATGTCTGT CTCTCTGGTC TCTCCAGAAG
1551 1600

TCTTCCATGG CCACCTTCGT CCCCACCCTC CAGAGGAATC TGAAACCGCA
1601 1650

TGTGCTCCCT GGCCCCCACA GCCCCTGCCT CTCCCAGAGC AGCAGTACCT
1651 1700

AAGCCTCAGT GCACTCCAAG AATTGAAACC CTCAGTCTGC TGCCCCTCCC
1701 1750

```
CACCAGAATG  TTTCTCTCCC  ATTCTTACCC  ACTCAAGGCC  CTTTCAGTAG
1751                                                    1800

CCCCTTGGAG  TATTCTCTTC  CTACATATCA  GGGCAACTTC  CAAACTCATC
1801                                                    1850

ACCCTTCTGA  GGGGTGGGGG  AAAGACCCCC  ACCACATCGG  GGGAGCAGTC
1851                                                    1900

CTCCAAGGAC  TGGCCAGTCT  CCAGATGCCC  GTGCACACAG  GAACACTGCC
1901                                                    1950

TTATGCACGG  GAGTCCCAGA  AGAAGGGGTG  ATTTCTTTCC  CCACCTTAGT
1951                                                    2000

TACACCATCA  AGACCCAGCC  AGGGCATCCC  CCCTCCTGGC  CTGAGGGCCA
2001                                                    2050

GCTCCCCATC  CTGAAAAACC  TGTCTGCTCT  CCCCACCCCT  TTGAGGCTAT
2051                                                    2100

AGGGCCCAAG  GGGCAGGTTG  GACTGGATTC  CCCTCCAGCC  CCTCCCGCCC
2101                                                    2150

CCAGGACAAA  ATCAGCCACC  CCAGGGGCAG  GGCCTCACTT  GCCTCAGGAA
2151                                                    2200

CCCCAGCCTG  CCAGCACCTA  TTCCACCTCC  CAGCCCAGCA
2201                                        2239
```

Nucleotide sequence of a mouse uroplakin II 5' flanking region. The translational start site is denoted with an asterisk. SEQ ID NO:__ (number 1 of SEQ ID NO:6__corresponds to position -3592 with respect to the translational start site).

```
CTCGAGGATCTCGGCCCTCTTTCTGCATCCTTGTCCTAAATCATTTTCAT
1                                                   50

ATCTTGCTAGACCTCAGTTTGAGAGAAACGAACCTTCTCATTTTCAAGTT
51                                                  100

GAAAAAAAAAAGAGGTTCAAAGTGGCTCACTCAAAGTTACAAGCCAACAC
101                                                 150

TCACCACTACGAGTACAATGGCCACCATTAGTGCTGGCATGCCCCAGGAG
151                                                 200

ACAGGCATGCATATTATTCTAGATGACTGGGAGGCAGAGGGGTGGCCTAG
201                                                 250
```

TGAGGTCAGACTGTGGACAGATCAGGCAGATGTGGGTTCTGATCCCAATT
251 300

CCTCAGGCCGCAGAACTACTGTGGTTCAAGAAGGGGACAAAAGGACTGCA
301 350

GTCCGGAACAGGAGGTCCATTTGAGAGCTGACTGAGCAGAAGAGGAAAGT
351 400

GAAGAACTTCTGGGGCAAGAGCTTACCCTACTTTACAGCTTTGTTGTCTT
401 450

CTTTACTCCAGGGGCGTCCCTGGTACTCAGTAAATGTCTGTTGGCTTGAG
451 500

GAACATATGTGTAAGGAGGAAGGAGAGGGAACTTGAGGGAGTTAAGACTC
501 550

AAGAATCAATCAAGGAGAGGACAGCAGAGAAGACAGGGTTTGGGAGAGAG
551 600

ACTCCAGACATTGGCCCTGGTTCCCTTCTTGGCCACTGTGAAACCCTCCA
601 650

GAGGAACTGAGTGCTGTGGCTTTAAATGATCTCAGCACTGTCAGTGAAGC
651 700

GCTCTGCTCAAAGAGTTATCCTCTTGCTCCTGTGCCGGGGCCTCCCCCTC
701 750

CTCTCAGCTCCCAAACCCTTCTCAGCCACTGTGATGGCATAATTAGATGC
751 800

GAGAGCTCAGACCGTCAGGTCTGCTCCAGGAACCACCCATTTTCCCCAAC
801 850

CCCAGAGAAAGGTCCTAGTGGAAAAGTGGGGGCCACTGAAGGGCTGATGG
851 900

GGTTCTGTCCTTTCCCCCATGCTGGGTGGACTTAAAGTCTGCGATGTGTG
900 950

TAGGGGGTAGAAGACAACAGAACCTGGGGGCTCCGGCTGGGAGCAGGAGG
951 1000

AACTCTCACCAGACGATCTCCAAATTTACTGTGCAATGGACGATCAGGAA
1001 1050

ACTGGTTCAGATGTAGCTTCTGATACAGTGGGTCTGAGGTAAAACCCGAA
1051 1100

ACTTAATTTCTTTCAAAAATTTAAAGTTGCATTTATTATTTTATATGTGT
1101 1150

GCCCATATGTGTGCCACAGTGTCTATGTGGAGGTCAGAGGGCAAGTTGTG
1151 1200

GGCATTGGCTCTCTCCTTTCATAATGTGGCTTCTGGGGACCAAAATGTCA
1201 1250

GGCATGGTGGCAAGAGCTTTTACCTGTTGAGCCATCTCATGGTTTCGTAA
1251 1300

AACTTCCTATGACGCTTACAGGTAACGCAGAGACACAGACTCACATTTGG
1301 1350

AGTTAGCAGATGCTGTATTGGTGTAAACACTCATACACAGACACACACAC
1351` 1400

ATACTCATACACACACACACACTTATCACATGCACACACATACTCGTA
1401 1450

TACACACAGACACACACACATGCACTCTCACATTCACATATTCATACACA
1451 1500

TCCACACACACACTCATCCACACACACAGACACACATACTCATCCACACA
1501 1550

CACACACACACATACTCATACACACACACAGACACACATACTCATACACA
1551 1600

CACACAGACACACACATATAATCATACATACACAGACACACTCATACATG
1601 1650

TGCACACACACACTCATCCACACACACACACTCATACACACACACACTCA
1651 1700

TACACACACACACTCATACACACACACACGAGGTTTTTCTCAGGCTGCCT
1701 1750

TTGGGTGGAGACTGGAACTGATTTCTGTTTTTCAGCTCCTTGGCTTTTTG
1751 1800

TCCCTTTAGATGAGATCTCCTCCTCACTTTACACACAGAAAGATCACACA
1801 1850

CGAGGGAGAACTGGCGGTGCGGAAGAGGGCTACACGGTAGGGTGTCAGGG
1851 1900

TCAGGAGATCTTCCTGGCAAGTCTCAAACCTCCACATAGCACAGTGTTTA

1901 1950

CGTGAGGATTTAGGAGGAATCAGGAAGAGGATTGGTTTACTGCAGAGCAG
1951 2000

ACCATATAGGTCCACTCCTAAGCCCCATTTGAAATTAGAAGTGAGACAGT
2001 2050

GTGGGATAAAAAGAGCAGATCTCTGGTCACATTTTTAAAGGGATATGAGG
2051 3000

GTCCTGTGCCTTTAAGCCTTCCCATCTCCCTCCAATCCCCCCTCACCTTC
2101 2150

CCCACCCTAACCCTCCCCAGGTTTCTGGAGGAGCAGAGTTGCGTCTTCTC
2151 2200

CCTGCCCTGCCGAGCTGCTCACTGGCTGCTCTAGAGGCTGTGCTTTGCGG
2201 2250

TCTCCATGGAAACCATTAGTTGCTAAGCAACTGGAGCATCATCTGTGCTG
2251 2300

AGCTCAGGTCCTATCGAGTTCACCTAGCTGAGACACCCACGCCCCTGCAG
2301 2350

CCACTTTGCAGTGACAAGCCTGAGTCTCAGGTTCTGCATCTATAAAAACG
2351 2400

AGTAGCCTTTCAGGAGGGCATGCAGAGCCCCCTGGCCAGCGTCTAGAGGA
2401 2450

GAGGTGACTGAGTGGGGCCATGTCACTCGTCCATGGCTGGAGAACCTCCA
2451 2500

TCAGTCTCCCAGTTAGCCTGGGGCAGGAGAGAACCAGAGGAGCTGTGGCT
2501 2550

GCTGATTGGATGATTTACGTACCCAATCTGTTGTCCCAGGCATCGAACCC
2551 2600

CAGAGCGACCTGCACACATGCCACCGCTGCCCCGCCCTCCACCTCCTCTG
2601 2650

CTCCTGGTTACAGGATTGTTTTGTCTTGAAGGGTTTTGTTGTTGCTACTT
2651 2700

TTTGCTTTGTTTTTTCTTTTTTAACATAAGGTTTCTCTGTGTAGCCCTAG
2701 2750

CTGTCCTGGAACTCACTCTGTAGACCAGGCTGGCCTCAAACTCAGAAATC
2751 2800

CACCTTCCTCCCAAGTGCTGGGATTAAAGGCATTCGCACCATCGCCCAGC
2801 2850

CCCCGGTCTTGTTTCCTAAGGTTTTCCTGCTTTACTCGCTACCCGTTGCA
2851 2900

CAACCGCTTGCTGTCCAAGTCTGTTTGTATCTACTCCACCGCCCACTAGC
2901 2950

CTTGCTGGACTGGACCTACGTTTACCTGGAAGCCTTCACTAACTTCCCTT
2951 3000

GTCTCCACCTTCTGGAGAAATCTGAAGGCTCACACTGATACCCTCCGCTT
3001 3050

CTCCCAGAGTCGCAGTTTCTTAGGCCTCAGTTAAATACCAGAATTGGATC
3051 3100

TCAGGCTCTGCTATCCCCACCCTACCTAACCAACCCCCTCCTCTCCCATC
3101 3150

CTTACTAGCCAAAGCCCTTTCAACCCTTGGGGCTTTTCCTACACCTACAC
3151 3200

ACCAGGGCAATTTTAGAACTCATGGCTCTCCTAGAAAACGCCTACCTCCT
3201 3250

TGGAGACTGACCCTCTACAGTCCAGGAGGCAGACACTCAGACAGAGGAAC
3251 3300

TCTGTCCTTCAGTCGCGGGAGTTCCAGAAAGAGCCATACTCCCCTGCAGA
3301 3350

GCTAACTAAGCTGCCAGGACCCAGCCAGAGCATCCCCCTTTAGCCGAGGG
3351 3400

CCAGCTCCCCAGAATGAAAAACCTGTCTGGGGCCCCTCCCTGAGGCTACA
3401 3450

GTCGCCAAGGGGCAAGTTGGACTGGATTCCCAGCAGCCCCTCCCACTCCG
3451 3500

AGACAAAATCAGCTACCCTGGGGCAGGCCTCATTGGCCCCAGGAAACCCC
3501 3550

AGCCTGTCAGCACCTGTTCCAGGATCCAGTCCCAGCGCAGTA
3551 3592

AFP-TRE. SEQ ID NO:__.

```
1     GCATTGCTGTGAACTCTGTACTTAGGACTAAACTTTGAGCAATAACACACATAGATTGAG
61    GATTGTTTGCTGTTAGCATACAAACTCTGGTTCAAAGCTCCTCTTTATTGCTTGTCTTGG
121   AAAATTTGCTGTTCTTCATGGTTTCTCTTTTCACTGCTATCTATTTTTCTCAACCACTCA
181   CATGGCTACAATAACTGTCTGCAAGCTTATGATTCCCAAATATCTATCTCTAGCCTCAAT
241   CTTGTTCCAGAAGATAAAAAGTAGTATTCAAATGCACATCAACGTCTCCACTTGGAGGGC
301   TTAAAGACGTTTCAACATACAAACCGGGGAGTTTTGCCTGGAATGTTTCCTAAAATGTGT
361   CCTGTAGCACATAGGGTCCTCTTGTTCCTTAAAATCTAATTACTTTTAGCCCAGTGCTCA
421   TCCCACCTATGGGGAGATGAGAGTGAAAAGGGAGCCTGATTAATAATTACACTAAGTCAA
481   TAGGCATAGAGCCAGGACTGTTTGGGTAAACTGGTCACTTTATCTTAAACTAAATATATC
541   CAAAACTGAACATGTACTTAGTTACTAAGTCTTTGACTTTATCTCATTCATACCACTCAG
601   CTTTATCCAGGCCACTTATGAGCTCTGTGTCCTTGAACATAAAATACAAATAACCGCTAT
661   GCTGTTAATTATTGGCAAATGTCCCATTTTCAACCTAAGGAAATACCATAAAGTAACAGA
721   TATACCAACAAAAGGTTACTAGTTAACAGGCATTGCCTGAAAAGAGTATAAAAGAATTTC
781   AGCATGATTTTCCATATTGTGCTTCCACCACTGCCAATAACA (822)
```

Probasin -TRE SEQ ID NO:__

```
  -426
5'-AAGCTTCCACAAGTGCATTTAGCCTCTCCAGTATTGCTGATGAATCCACAGT
TCAGGTTCAATGGCGTTCAAAACTTGATCAAAAATGACCAGACTTTATATTTA
CACCAACATCTATCTGATTGGAGGAATGGATAATAGTCATCATGTTTAAACAT
CTACCATTCCAGTTAAGAAAATATGATAGCATCTTGTTCTTAGTCTTTTTCTTA
                                ARE-1
ATAGGGACATAAAGCCCACAAATAAAAATATGCCTGAAGAATGGGACAGGC
ATTGGGCATTGTCCATGCCTAGTAAAGTACTCCAAGAACCTATTTGTATACTA
                              ARE-2
GATGACACAATGTCAATGTCTGTGTACAACTGCCAACTGGGATGCAAGACAC
TGCCCATGCCAATCATCCTGAAAAGCAGCTATAAAAAGCAGGAAGCTACTCT
      CAAT box                TATAA box
  +1                          +28
```

GCACCTTGTCAGTAGGTCCAGATACCTACAG-3'
Transcription site

Tyrosinase-TRE SEQ ID NO:__

PinAl end -1956

1 *CCGGT*TGAAAATGATAAGTTGAATTCTGTCTTCGAGAACATAGAAAAGAA

51 TTATGAAATGCCAACATGTGGTTACAAGTAATGCAGACCCAAGGCTCCCC

101 AGGGACAAGAAGTCTTGTGTTAACTCTTTGTGGCTCTGAAAGAAAGAGAG

151 AGAGAAAAGATTAAGCCTCCTTGTGGAGATCATGTGATGACTTCCTGATT -1716

201 CCAGCCAGAGCGAGCATTTCCATGGAAACTTCTCTTCCTCTTCACTCGAG

-231 251 ATTACTAACCTTATTGTTAATATTCTAACCATAAGAATTAAACTATTAAT

301 GGTGAATAGAGTTTTTCACTTTAACATAGGCCTATCCCACTGGTGGGATA

351 CGAGCCAATTCGAAAGAAAAAGTCAGTCATGTGCTTTTCAGAGGATGAAA

401 GCTTAAGATAAAGACTAAAAGTGTTTGATGCTGGAGGTGGGAGTGGTATT

451 ATATAGGTCTCAGCCAAGACATGTGATAATCACTGTAGTAGTAGCTGGAA

501 AGAGAAATCTGTGACTCCAATTAGCCAGTTCCTGCAGACCTTGTGA +65

PinAl end

Human glandular kallikrein-TRE SEQ ID NO:__

gaattcagaa ataggggaag gttgaggaag gacactgaac tcaaagggga tacagtgatt 60

ggtttatttg tcttctcttc acaacattgg tgctggagga attcccaccc tgaggttatg 120

aagatgtctg aacacccaac acatagcact ggagatatga gctcgacaag agtttctcag 180

ccacagagat tcacagccta gggcaggagg acactgtacg ccaggcagaa tgacatggga 240

attgcgctca cgattggctt gaagaagcaa ggactgtggg aggtgggctt tgtagtaaca 300

agagggcagg gtgaactctg attcccatgg gggaatgtga tggtcctgtt acaaattttt 360

caagctggca gggaataaaa cccattacgg tgaggacctg tggagggcgg ctgccccaac 420

tgataaagga aatagccagg tgggggcctt tcccattgta ggggggacat atctggcaat 480

agaagccttt gagacccttt agggtacaag tactgaggca gcaaataaaa tgaaatctta 540

tttttcaact ttatactgca tgggtgtgaa gatatatttg tttctgtaca gggggtgagg 600

gaaaggaggg gaggaggaaa gttcctgcag gtctggtttg gtcttgtgat ccaggggtc
660

ttggaactat ttaaattaaa ttaaattaaa acaagcgact gttttaaatt aaattaaatt
720

aaattaaatt ttactttatt ttatcttaag ttctgggcta catgtgcagg acgtgcagct
780

ttgttacata ggtaaacgtg tgccatggtg gtttgctgta cctatcaacc catcacctag
840

gtattaagcc cagcatgcat tagctgtttt tcctgacgct ctcctctcc ctgactccca
900

caacaggccc cagtgtgtgt tgttcccctc cctgtgtcca tgtgttctca ttgttcagct
960

cccacttata agtgagaaca tgtggtgttt ggttttctgt ttctgtgtta gtttgctgag
1020

gataatggct tccacctcca tccatgttcc tgcaaaggac gtgatcttat tctttttttat
1080

ggttgcatag aaattgtttt tacaaatcca attgatattg tatttaatta caagttaatc
1140

taattagcat actagaagag attacagaag atattaggta cattgaatga ggaaatatat
1200

aaaataggac gaaggtgaaa tattaggtag gaaaagtata atagttgaaa gaagtaaaaa
1260

aaaatatgca tgagtagcag aatgtaaaag aggtgaagaa cgtaatagtg acttttttaga
1320

ccagattgaa ggacagagac agaaaaattt taaggaattg ctaaaccatg tgagtgttag
1380

aagtacagtc aataacatta aagcctcagg aggagaaaag aataggaaag gaggaaatat
1440

gtgaataaat agtagagaca tgtttgatgg attttaaaat atttgaaaga cctcacatca
1500

aaggattcat accgtgccat tgaagaggaa gatggaaaag ccaagaagcc agatgaaagt
1560

tagaaatatt attggcaaag cttaaatgtt aaaagtccta gagagaaagg atggcagaaa
1620

tattggcggg aaagaatgca gaacctagaa tataaattca tcccaacagt ttggtagtgt
1680

gcagctgtag ccttttctag ataatacact attgtcatac atcgcttaag cgagtgtaaa
1740

atggtctcct cactttattt atttatatat ttatttagtt ttgagatgga gcctcgctct
1800

gtctcctagg ctggagtgca atagtgcgat accactcact gcaacctctg cctcctctgt
1860

tcaagtgatt ttcttacctc agcctcccga gtagctggga ttacaggtgc gtgccaccac
1920

acccggctaa tttttgtatt ttttgtagag acggggtttt gccatgttgg ccaggctggt
1980

cttgaactcc tgacatcagg tgatccacct gccttggcct cctaaagtgc tgggattaca
2040

ggcatgagcc accgtgccca accactttat ttatttttta tttttatttt taaatttcag
2100

cttctatttg aaatacaggg ggcacatata taggattgtt acatgggtat attgaactca
2160

ggtagtgatc atactaccca acaggtaggt tttcaaccca ctccccctct tttcctcccc
2220

attctagtag tgtgcagtgt ctattgttct catgtttatg tctatgtgtg ctccaggttt
2280

agctcccacc tgtaagtgag aacgtgtggt atttgatttt ctgtccctgt gttaattcac
2340

ttaggattat ggcttccagc tccattcata ttgctgtaaa ggatatgatt catttttcat
2400

ggccatgcag tattccatat tgcgtataga tcacattttc tttctttttt ttttttgaga
2460

cggagtcttg ctttgctgcc taggctggag tgcagtagca cgatctcggc tcactgcaag
2520

cttcacctcc ggggttcacg tcattcttct gtctcagctt cccaagtagc tgggactaca
2580

ggcgcccgcc accacgtccg gctaattttt ttgtgtgttt ttagtagaga tgggggtttc
2640

actgtgttag ccaggatggt cttgatctcc tgaccttgtg gtccacctgc ctcggtctcc
2700

caaagtgctg ggattacagg ggtgagccac tgcgcccggc ccatatatac cacattttct
2760

ttaaccaatc caccattgat gggcaactag gtagattcca tggattccac agttttgcta
2820

ttgtgtgcag tgtggcagta gacatatgaa tgaatgtgtc tttttggtat aatgatttgc
2880

attcctttgg gtatacagtc attaatagga gtgctgggtt gaacggtggc tctgtttaaa
2940

attctttgag aattttccaa actgtttgcc atagagagca aactaattta catttccacg
3000

aacagtatat aagcattccc ttttctccac agctttgtca tcatggtttt ttttttcctt
3060

tattttaaaa aagaatatgt tgttgttttc ccagggtaca tgtgcaggat gtgcaggttt
3120

gttacatagg tagtaaacgt gagccatggt ggtttgctgc acctgtcaac ccattacctg
3180

ggtatgaagc cctgcctgca ttagctcttt tccctaatgc tctcactact gccccaccct
3240

caccctgaca gggcaaacag acaacctaca gaatgggagg aaatttttgc aatctattca
3300

tctgacaaag gtcaagaata tccagaatct acaaggaact taagcaaatt tttacttttt
3360

aataatagcc actctgactg gcgtgaaatg gtatctcatt gtggttttca tttgaatttc
3420

tctgatgatc agtgacgatg agcatttttt catatttgtt ggctgcttgt acgtcttttg
3480

agaagtgtct cttcatgcct tttggccact ttaatgggat tatttttgc tttttagttt
3540

aagttcctta tagattctgg atattagact tcttattgga tgcatagttt gtgaatactc
3600

tcttccattc tgtaggttgt ctgtttactc tattgatggc ttcttttgct gtgccgaagc
3660

atcttagttt aattagaaac cacctgccaa tttttgtttt tgttgcaatt gcttttgggg
3720

acttagtcat aaactctttg ccaaggtctg ggtcaagaag agtatttcct aggttttctt
3780

ctagaatttt gaaagtctga atgtaaacat ttgcattttt aatgcatctt gagttagttt
3840

ttgtatatgt gaaaggtcta ctctcatttt ctttccctct ttctttcttt ctttcttttc
3900

tttctttctt tctttctttc tttctttctt tctttctttc tttctttttg tccttctttc
3960

tttctttctt tctctttctt tctctctttc ttttttttt ttgatggagt attgctctgt
4020

tgcccaggct gcagtgcagc ggcacgatct cggctcactg caacctctgc ctcctgggtt
4080

caactgattc tcctgcatca gccttccaag tagctgggat ataggcgcc cgccaccacg
4140

cccgactaat ttttgtattt ttagtagaga cggggttgtg ccatgttggc caggctggtt
4200

tgaaactcct gacctcaaac gatctgcctg ccttggcctc ccaaagtgct gggattacag
4260

gtgtgagcca ctgtgcccag ccaagaatgt cattttctaa gaggtccaag aacctcaaga
4320

tattttggga ccttgagaag agaggaattc atacaggtat tacaagcaca gcctaatggc
4380

aaatctttgg catggcttgg cttcaagact ttaggctctt aaaagtcgaa tccaaaaatt
4440

tttataaaag ctccagctaa gctaccttaa aaggggcctg tatggctgat cactcttctt
4500

gctatacttt acacaaataa acaggccaaa tataatgagg ccaaaattta ttttgcaaat
4560

aaattggtcc tgctatgatt tactcttggt aagaacaggg aaaatagaga aaaatttaga
4620

ttgcatctga ccttttttc tgaattttta tatgtgccta caatttgagc taaatcctga
4680

attattttct ggttgcaaaa actctctaaa gaagaacttg gttttcattg tcttcgtgac
4740

acatttatct ggctctttac tagaacagct ttcttgtttt tggtgttcta gcttgtgtgc
4800

cttacagttc tactcttcaa attattgtta tgtgtatctc atagttttcc ttcttttgag
4860

aaaactgaag ccatggtatt ctgaggacta gagatgactc aacagagctg gtgaatctcc
4920

tcatatgcaa tccactgggc tcgatctgct tcaaattgct gatgcactgc tgctaaagct
4980

atacatttaa aaccctcact aaaggatcag ggaccatcat ggaagaggag gaaacatgaa
5040

attgtaagag ccagattcgg ggggtagagt gtggaggtca gagcaactcc accttgaata
5100

agaaggtaaa gcaacctatc ctgaaagcta acctgccatg gtggcttctg attaacctct
5160

gttctaggaa gactgacagt ttgggtctgt gtcattgccc aaatctcatg ttaaattgta
5220

atccccagtg ttcggaggtg ggacttggtg gtaggtgatt cggtcatggg agtagatttt
5280

cttctttgtg gtgttacagt gatagtgagt gagttctcgt gagatctggt catttaaaag
5340

tgtgtggccc ctccccctccc tctcttggtc ctcctactgc catgtaagat acctgctcct
5400

gctttgcctt ctaccataag taaaagcccc ctgaggcctc cccagaagca gatgccacca
5460

tgcttcctgt acagcctgca gaaccatcag ccaattaaac ctcttttctg tataaattac
5520

cagtcttgag tatctcttta cagcagtgtg agaacggact aatacaaggg tctccaaaat
5580

tccaagttta tgtattcttt cttgccaaat agcaggtatt taccataaat cctgtcctta
5640

ggtcaaacaa ccttgatggc atcgtacttc aattgtctta cacattcctt ctgaatgact
5700

cctcccctat ggcatataag ccctgggtct tgggggataa tggcagaggg gtccaccatc
5760

ttgtctggct gccacctgag acacggacat ggcttctgtt ggtaagtctc tattaaatgt
5820

ttctttctaa gaaactggat ttgtcagctt gtttctttgg cctctcagct tcctcagact
5880

ttggggtagg ttgcacaacc ctgcccacca cgaaacaaat gtttaatatg ataaatatgg
5940

atagatataa tccacataaa taaaagctct tggagggccc tcaataattg ttaagagtgt
6000

aaatgtgtcc aaagatggaa aatgtttgag aactactgtc ccagagattt tcctgagttc
6060

tagagtgtgg gaatatagaa cctggagctt ggcttcttca gcctagaatc aggagtatgg
6120

ggctgaagtc tgaagcttgg cttcagcagt ttggggttgg cttccggagc acatatttga
6180

catgttgcga ctgtgatttg gggtttggta tttgctctga atcctaatgt ctgtccttga
6240

ggcatctaga atctgaaatc tgtggtcaga attctattat cttgagtagg acatctccag
6300

tcctggttct gccttctagg gctggagtct gtagtcagtg acccggtctg gcatttcaac
6360

ttcatataca gtgggctatc ttttggtcca tgtttcaacc aaacaaccga ataaaccatt
6420

agaacctttc cccacttccc tagctgcaat gttaaaccta ggatttctgt ttaataggtt
6480

catatgaata atttcagcct gatccaactt tacattcctt ctaccgttat tctacaccca
6540

ccttaaaaat gcattcccaa tatattccct ggattctacc tatatatggt aatcctggct
6600

ttgccagttt ctagtgcatt aacatacctg atttacattc ttttacttta aagtggaaat
6660

aagagtccct ctgcagagtt caggagttct caagatggcc cttacttctg acatcaattg
6720

agatttcaag ggagtcgcca agatcatcct caggttcagt gattgctggt agccctcata
6780

taactcaatg aaagctgtta tgctcatggc tatggtttat tacagcaaaa gaatagagat
6840

gaaaatctag caagggaaga gttgcatggg gcaaagacaa ggagagctcc aagtgcagag
6900

attcctgttg ttttctccca gtggtgtcat ggaaagcagt atcttctcca tacaatgatg
6960

tgtgataata ttcagtgtat tgccaatcag ggaactcaac tgagccttga ttatattgga
7020

gcttggttgc acagacatgt cgaccacctt catggctgaa ctttagtact tagcccctcc
7080

agacgtctac agctgatagg ctgtaaccca acattgtcac ataaatcac attgttagac
7140

tatccagtgt ggcccaagct cccgtgtaaa cacaggcact ctaaacaggc aggatatttc
7200

aaaagcttag agatgacctc ccaggagctg aatgcaaaga cctggcctct ttgggcaagg
7260

agaatccttt accgcacact ctccttcaca gggttattgt gaggatcaaa tgtggtcatg
7320

tgtgtgagac accagcacat gtctggctgt ggagagtgac ttctatgtgt gctaacattg
7380

ctgagtgcta agaaagtatt aggcatggct ttcagcactc acagatgctc atctaatcct
7440

cacaacatgg ctacagggtg ggcactacta gcctcatttg acagaggaaa ggactgtgga
7500

taagaagggg gtgaccaata ggtcagagtc attctggatg caaggggctc cagaggacca
7560

tgattagaca ttgtctgcag agaaattatg gctggatgtc tctgccccgg aaaggggat
7620

gcactttcct tgaccccta tctcagatct tgactttgag gttatctcag acttcctcta
7680

tgataccagg agcccatcat aatctctctg tgtcctctcc ccttcctcag tcttactgcc
7740

cactcttccc agctccatct ccagctggcc aggtgtagcc acagtaccta actctttgca
7800

gagaactata aatgtgtatc ctacagggga gaaaaaaaaa aagaactctg aaagagctga
7860

cattttaccg acttgcaaac acataagcta acctgccagt tttgtgctgg tagaactcat
7920

gagactcctg ggtcagaggc aaaagatttt attacccaca gctaaggagg cagcatgaac
7980

tttgtgttca catttgttca ctttgccccc caattcatat gggatgatca gagcagttca
8040

ggtggatgga cacaggggtt tgtggcaaag gtgagcaacc taggcttaga aatcctcaat
8100

cttataagaa ggtactagca aacttgtcca gtctttgtat ctgacggaga tattatcttt
8160

ataattgggt tgaaagcaga cctactctgg aggaacatat tgtatttatt gtcctgaaca
8220

gtaaacaaat ctgctgtaaa atagacgtta actttattat ctaaggcagt aagcaaacct
8280

agatctgaag gcgataccat cttgcaaggc tatctgctgt acaaatatgc ttgaaaagat
8340

ggtccagaaa agaaaacggt attattgcct ttgctcagaa gacacacaga aacataagag
8400

aaccatggaa aattgtctcc caacactgtt cacccagagc cttccactct tgtctgcagg
8460

acagtcttaa catcccatca ttagtgtgtc taccacatct ggcttcaccg tgcctaacca
8520

agatttctag gtccagttcc ccaccatgtt tggcagtgcc ccactgccaa ccccagaata
8580

agggagtgct cagaattccg aggggacatg ggtggggatc agaacttctg ggcttgagtg
8640

cagaggggc ccatactcct tggttccgaa ggaggaagag gctggaggtg aatgtccttg
8700

gaggggagga atgtgggttc tgaactctta aatccccaag ggaggagact ggtaaggtcc
8760

cagcttccga ggtactgacg tgggaatggc ctgagaggtc taagaatccc gtatcctcgg
8820

gaaggagggg ctgaaattgt gaggggttga gttgcagggg tttgttagct tgagactcct
8880

tggtgggtcc ctgggaagca aggactggaa ccattggctc agggtttgg tgtgaaggta
8940

atgggatctc ctgattctca aagggtcaga ggactgagag ttgcccatgc tttgatcttt
9000

ccatctactc cttactccac ttgagggtaa tcacctactc ttctagttcc acaagagtgc
9060

gcctgcgcga gtataatctg cacatgtgcc atgtcccgag gcctggggca tcatccactc
9120

atcattcagc atctgcgcta tgcgggcgag gccggcgcca tgacgtcatg tagctgcgac
9180

tatccctgca gcgcgcctct cccgtcacgt cccaaccatg gagctgtgga cgtgcgtccc
9240

ctggtggatg tggcctgcgt ggtgccaggc cggggcctgg tgtccgataa agatcctaga
9300

accacaggaa accaggactg aaaggtgcta gagaatggcc atatgtcgct gtccatgaaa
9360

tctcaaggac ttctgggtgg agggcacagg agcctgaact tacgggtttg ccccagtcca
9420

ctgtcctccc aagtgagtct cccagatacg aggcactgtg ccagcatcag cttcatctgt
9480

accacatctt gtaacaggga ctacccagga ccctgatgaa caccatggtg tgtgcaggaa
9540

gaggggggtga aggcatggac tcctgtgtgg tcagagccca gaggggggcca tgacgggtgg
9600

ggaggaggct gtggactggc tcgagaagtg ggatgtggtt gtgtttgatt tcctttggcc
9660

agataaagtg ctggatatag cattgaaaac ggagtatgaa gaccagttag aatggagggt
9720

caggttggag ttgagttaca gatggggtaa aattctgctt cggatgagtt tggggattgg
9780

caatctaaag gtggtttggg atggcatggc tttgggatgg aaataggttt gtttttatgt
9840

tggctgggaa gggtgtgggg attgaattgg ggatgaagta ggtttagttt tggagataga
9900

atacatggag ctggctattg catgcgagga tgtgcattag tttggtttga tctttaaata
9960

aaggaggcta ttagggttgt cttgaattag attaagttgt gttgggttga tgggttgggc
10020

ttgtgggtga tgtggttgga ttgggctgtg ttaaattggt ttgggtcagg ttttggttga
10080

ggttatcatg gggatgagga tatgcttggg acatggattc aggtggttct cattcaagct
10140

gaggcaaatt tcctttcaga cggtcattcc agggaacgag tggttgtgtg ggggaaatca
10200

ggccactggc tgtgaatatc cctctatcct ggtcttgaat tgtgattatc tatgtccatt
10260

ctgtctcctt cactgtactt ggaattgatc tggtcattca gctggaaatg ggggaagatt
10320

ttgtcaaatt cttgagacac agctgggtct ggatcagcgt aagccttcct tctggtttta
10380

ttgaacagat gaaatcacat ttttttttttc aaaatcacag aaatcttata gagttaacag
10440

tggactctta taataagagt taacaccagg actcttattc ttgattcttt tctgagacac
10500

caaaatgaga tttctcaatg ccaccctaat tctttttttt ttttttttttt tttttgagac
10560

acagtctggg tcttttgctc tgtcactcag gctggagcgc agtggtgtga tcatagctca
10620

ctgaaccctt gacctcctgg acttaaggga tcctcctgct tcagcctcct gagtagatgg
10680

ggctacaggt gcttgccacc acacctggct aattaaattt ttttttttttt tttgtagaga
10740

aagggtctca ctttgttgcc ctggctgatc ttgaacttct gacttcaagt gattcttcag
10800

ccttggactc ccaaagcact gggattgctg gcatgagcca ctcaccgtgc ctggcttgca
10860

gcttaatctt ggagtgtata aacctggctc ctgatagcta gacatttcag tgagaaggag
10920

gcattggatt ttgcatgagg acaattctga cctaggaggg caggtcaaca ggaatccccg
10980

ctgtacctgt acgttgtaca ggcatggaga atgaggagtg aggaggccgt accggaaccc
11040

catattgttt agtggacatt ggattttgaa ataataggga acttggtctg ggagagtcat
11100

atttctggat tggacaatat gtggtatcac aaggttttat gatgagggag aaatgtatgt
11160

ggggaaccat tttctgagtg tggaagtgca agaatcagag agtagctgaa tgccaacgct
11220

tctatttcag gaacatggta agttggaggt ccagctctcg ggctcagacg ggtataggga
11280

ccaggaagtc tcacaatccg atcattctga tatttcaggg catattaggt ttggggtgca
11340

aaggaagtac ttgggactta ggcacatgag actttgtatt gaaaatcaat gattggggct
11400

ggccgtggtg ctcacgcctg taatctcatc actttgggag accgaagtgg gaggatggct
11460

tgatctcaag agttggacac cagcctaggc aacatggcca gaccctctct ctacaaaaaa
11520

attaaaaatt agctggatgt ggtggtgcat gcttgtggtc tcagctatcc tggaggctga
11580

gacaggagaa tcggttgagt ctgggagttc aaggctacag ggagctgcga tcacgccgct
11640

gcactccagc ctgggaaaca gagtgagact gtctcagaat ttttttaaaa aagaatcagt
11700

gatcatccca acccctgttg ctgttcatcc tgagcctgcc ttctctggct ttgttcccta
11760

gatcacatct ccatgatcca taggccctgc ccaatctgac ctcacaccgt gggaatgcct
11820

ccagactgat ctagtatgtg tggaacagca agtgctggct ctccctcccc ttccacagct
11880

ctgggtgtgg gaggggggttg tccagcctcc agcagcatgg ggagggcctt ggtcagcatc
11940

taggtgccaa cagggcaagg gcggggtcct ggagaatgaa ggctttatag ggctcctcag
12000

ggaggccccc cagccccaaa ctgcaccacc tggccgtgga caccggt
12047

HRE-TRE SEQ ID NO:__

ccccgagg cagtgcat gaggctcagg gcgtgcgt gagtcgcagcgagaccccg gggtgcag gccgga

PSA-TRE SEQ ID NO:__

aagcttctag ttttcttttc ccggtgacat cgtggaaagc actagcatct ctaagcaatg 60

atctgtgaca atattcacag tgtaatgcca tccagggaac tcaactgagc cttgatgtcc
120

agagattttt gtgttttttt ctgagactga gtctcgctct gtgccaggct ggagtgcagt
180

ggtgcaacct tggctcactg caagctccgc ctcctgggtt cacgccattc tcctgcctca
240

gcctcctgag tagctgggac tacaggcacc cgccaccacg cctggctaat ttttttgtat
300

ttttagtaga gatggggttt cactgtgtta gccaggatgg tctcagtctc ctgacctcgt
360

gatctgccca ccttggcctc ccaaagtgct gggatgacag gcgtgagcca ccgcgcctgg
420

ccgatatcca gagatttttt ggggggctcc atcacacaga catgttgact gtcttcatgg
480

ttgactttta gtatccagcc cctctagaaa tctagctgat atagtgtggc tcaaaacctt
540

cagcacaaat cacaccgtta gactatctgg tgtggcccaa accttcaggt gaacaaaggg
600

actctaatct ggcaggatac tccaaagcat tagagatgac ctcttgcaaa gaaaaagaaa
660

tggaaaagaa aaagaaagaa aggaaaaaaa aaaaaaaaaa gagatgacct ctcaggctct
720

gaggggaaac gcctgaggtc tttgagcaag gtcagtcctc tgttgcacag tctccctcac
780

agggtcattg tgacgatcaa atgtggtcac gtgtatgagg caccagcaca tgcctggctc
840

tggggagtgc cgtgtaagtg tatgcttgca ctgctgaatg gctgggatgt gtcagggatt
900

atcttcagca cttacagatg ctcatctcat cctcacagca tcactatggg atgggtatta
960

ctggcctcat ttgatggaga aagtggctgt ggctcagaaa ggggggacca ctagaccagg
1020

gacactctgg atgctgggga ctccagagac catgaccact caccaactgc agagaaatta
1080

attgtggcct gatgtccctg tcctggagag ggtggaggtg gaccttcact aacctcctac
1140

cttgaccctc tcttttaggg ctctttctga cctccaccat ggtactagga ccccattgta
1200

ttctgtaccc tcttgactct atgaccccca ccgcccactg catccagctg ggtcccctcc
1260

tatctctatt cccagctggc cagtgcagtc tcagtgccca cctgtttgtc agtaactctg
1320

aaggggctga cattttactg acttgcaaac aaataagcta actttccaga gttttgtgaa
1380

tgctggcaga gtccatgaga ctcctgagtc agaggcaaag gcttttactg ctcacagctt
1440

agcagacagc atgaggttca tgttcacatt agtacacctt gccccccccа aatcttgtag
1500

ggtgaccaga gcagtctagg tggatgctgt gcagaagggg tttgtgccac tggtgagaaa
1560

cctgagatta ggaatcctca atcttatact gggacaactt gcaaacctgc tcagcctttg
1620

tctctgatga agatattatc ttcatgatct tggattgaaa acagacctac tctggaggaa
1680

catattgtat cgattgtcct tgacagtaaa caaatctgtt gtaagagaca ttatctttat
1740

tatctaggac agtaagcaag cctggatctg agagagatat catcttgcaa ggatgcctgc
1800

tttacaaaca tccttgaaac aacaatccag aaaaaaaaag gtgttactgt ctttgctcag
1860

aagacacaca gatacgtgac agaaccatgg agaattgcct cccaacgctg ttcagccaga
1920

gccttccacc ctttctgcag gacagtctca acgttccacc attaaatact tcttctatca
1980

catcccgctt ctttatgcct aaccaaggtt ctaggtcccg atcgactgtg tctggcagca
2040

ctccactgcc aaacccagaa taaggcagcg ctcaggatcc cgaaggggca tggctgggga
2100

tcagaacttc tgggtttgag tgaggagtgg gtccaccctc ttgaatttca aaggaggaag
2160

aggctggatg tgaaggtact gggggaggga aagtgtcagt tccgaactct taggtcaatg
2220

agggaggaga ctggtaaggt cccagctccc gaggtactga tgtgggaatg gcctaagaat
2280

ctcatatcct caggaagaag gtgctggaat cctgaggggt agagttctgg gtatatttgt
2340

ggcttaaggc tctttggccc ctgaaggcag aggctggaac cattaggtcc agggtttggg
2400

gtgatagtaa tgggatctct tgattcctca agagtctgag gatcgagggt tgcccattct
2460

tccatcttgc cacctaatcc ttactccact tgagggtatc accagccctt ctagctccat
2520

gaaggtcccc tgggcaagca caatctgagc atgaaagatg ccccagaggc cttgggtgtc
2580

atccactcat catccagcat cacactctga gggtgtggcc agcaccatga cgtcatgttg
2640

ctgtgactat ccctgcagcg tgcctctcca gccacctgcc aaccgtagag ctgcccatcc
2700

tcctctggtg ggagtggcct gcatggtgcc aggctgaggc ctagtgtcag acagggagcc
2760

tggaatcata gggatccagg actcaaaagt gctagagaat ggccatatgt caccatccat
2820

gaaatctcaa gggcttctgg gtggagggca cagggacctg aacttatggt ttcccaagtc
2880

tattgctctc ccaagtgagt ctcccagata cgaggcactg tgccagcatc agccttatct
2940

ccaccacatc ttgtaaaagg actacccagg gccctgatga acaccatggt gtgtacagga
3000

gtagggggtg gaggcacgga ctcctgtgag gtcacagcca agggagcatc atcatgggtg
3060

gggaggaggc aatggacagg cttgagaacg gggatgtggt tgtatttggt tttctttggt
3120

tagataaagt gctgggtata ggattgagag tggagtatga agaccagtta ggatggagga
3180

tcagattgga gttgggttag ataaagtgct gggtatagga ttgagagtgg agtatgaaga
3240

ccagttagga tggaggatca gattggagtt gggttagaga tggggtaaaa ttgtgctccg
3300

gatgagtttg ggattgacac tgtggaggtg gtttgggatg gcatggcttt gggatggaaa
3360

tagatttgtt ttgatgttgg ctcagacatc cttggggatt gaactgggga tgaagctggg
3420

tttgattttg gaggtagaag acgtggaagt agctgtcaga tttgacagtg gccatgagtt
3480

ttgtttgatg gggaatcaaa caatggggga agacataagg gttggcttgt taggttaagt
3540

tgcgttgggt tgatggggtc ggggctgtgt ataatgcagt tggattggtt tgtattaaat
3600

tgggttgggt caggttttgg ttgaggatga gttgaggata tgcttgggga caccggatcc
3660

atgaggttct cactggagtg gagacaaact tcctttccag gatgaatcca gggaagcctt
3720

aattcacgtg taggggaggt caggccactg gctaagtata tccttccact ccagctctaa
3780

gatggtctta aattgtgatt atctatatcc acttctgtct ccctcactgt gcttggagtt
3840

tacctgatca ctcaactaga aacaggggaa gattttatca aattcttttt ttttttttt
3900

ttttttgag acagagtctc actctgttgc ccaggctgga gtgcagtggc gcagtctcgg
3960

ctcactgcaa cctctgcctc ccaggttcaa gtgattctcc tgcctcagcc tcctgagttg
4020

ctgggattac aggcatgcag caccatgccc agctaatttt tgtattttta gtagagatgg
4080

ggtttcacca atgtttgcca ggctggcctc gaactcctga cctggtgatc cacctgcctc
4140

agcctcccaa agtgctggga ttacaggcgt cagccaccgc gcccagccac ttttgtcaaa
4200

ttcttgagac acagctcggg ctggatcaag tgagctactc tggttttatt gaacagctga
4260

aataaccaac tttttggaaa ttgatgaaat cttacggagt taacagtgga ggtaccaggg
4320

ctcttaagag ttcccgattc tcttctgaga ctacaaattg tgattttgca tgccacctta
4380

atctttttttt ttttttttttt aaatcgaggt ttcagtctca ttctatttcc caggctggag
4440

ttcaatagcg tgatcacagc tcactgtagc cttgaactcc tggccttaag agattctcct
4500

gcttcggtct cccaatagct aagactacag tagtccacca ccatatccag ataatttttа
4560

aatttttttgg ggggccgggc acagtggctc acgcctgtaa tcccaacacc atgggaggct
4620

gagatgggtg gatcacgagg tcaggagttt gagaccagcc tgaccaacat ggtgaaactc
4680

tgtctctact aaaaaaaaaa aaaatagaaa aattagccgg gcgtggtggc acacggcacc
4740

tgtaatccca gctactgagg aggctgaggc aggagaatca cttgaaccca gaaggcagag
4800

gttgcaatga gccgagattg cgccactgca ctccagcctg ggtgacagag tgagactctg
4860

tctcaaaaaa aaaaaatttt ttttttttttt ttgtagagat ggatcttgct ttgtttctct
4920

ggttggcctt gaactcctgg cttcaagtga tcctcctacc ttggcctcgg aaagtgttgg
4980

gattacaggc gtgagccacc atgactgacc tgtcgttaat cttgaggtac ataaacctgg
5040

ctcctaaagg ctaaaggcta aatatttgtt ggagaagggg cattggattt tgcatgagga
5100

tgattctgac ctgggagggc aggtcagcag gcatctctgt tgcacagata gagtgtacag
5160

gtctggagaa caaggagtgg ggggttattg gaattccaca ttgtttgctg cacgttggat
5220

tttgaaatgc tagggaactt tgggagactc atatttctgg gctagaggat ctgtggacca
5280

caagatcttt ttatgatgac agtagcaatg tatctgtgga gctggattct gggttgggag
5340

tgcaaggaaa agaatgtact aaatgccaag acatctattt caggagcatg aggaataaaa
5400

gttctagttt ctggtctcag agtggtgcat ggatcaggga gtctcacaat ctcctgagtg
5460

ctggtgtctt agggcacact gggtcttgga gtgcaaagga tctaggcacg tgaggctttg
5520

tatgaagaat cggggatcgt acccaccccc tgtttctgtt tcatcctggg catgtctcct
5580

ctgcctttgt cccctagatg aagtctccat gagctacaag ggcctggtgc atccagggtg
5640

atctagtaat tgcagaacag caagtgctag ctctccctcc ccttccacag ctctgggtgt
5700

gggaggggggt tgtccagcct ccagcagcat ggggagggcc ttggtcagcc tctgggtgcc
5760

agcagggcag gggcggagtc ctggggaatg aaggttttat agggctcctg ggggaggctc
5820

cccagcccca agctt
5835

CEA TRE SEQ ID NO:

aagcttttta gtgctttaga cagtgagctg gtctgtctaa cccaagtgac ctgggctcca 60

tactcagccc cagaagtgaa gggtgaagct gggtggagcc aaaccaggca agcctaccct 120

cagggctccc agtggcctga gaaccattgg acccaggacc cattacttct agggtaagga 180

aggtacaaac accagatcca accatggtct ggggggacag ctgtcaaatg cctaaaaata 240

tacctgggag aggagcaggc aaactatcac tgccccaggt tctctgaaca gaaacagagg 300

ggcaacccaa agtccaaatc caggtgagca ggtgcaccaa atgcccagag atatgacgag 360

gcaagaagtg aaggaaccac ccctgcatca aatgttttgc atgggaagga gaagggggtt 420

gctcatgttc ccaatccagg agaatgcatt tgggatctgc cttcttctca ctccttggtt 480

agcaagacta agcaaccagg actctggatt tggggaaaga cgtttatttg tggaggccag 540

tgatgacaat cccacgaggg cctaggtgaa gagggcagga aggctcgaga cactggggac 600

tgagtgaaaa ccacacccat gatctgcacc acccatggat gctccttcat tgctcacctt 660

tctgttgata tcagatggcc ccattttctg taccttcaca gaaggacaca ggctagggtc 720

tgtgcatggc cttcatcccc ggggccatgt gaggacagca ggtgggaaag atcatgggtc 780

ctcctgggtc ctgcagggcc agaacattca tcacccatac tgacctccta gatgggaatg 840

gcttccctgg ggctgggcca acggggcctg ggcaggggag aaaggacgtc aggggacagg 900

gaggaagggt catcgagacc cagcctggaa ggttcttgtc tctgaccatc caggatttac 960

ttccctgcat ctacctttgg tcattttccc tcagcaatga ccagctctgc ttcctgatct 1020

cagcctccca ccctggacac agcaccccag tccctggccc ggctgcatcc acccaatacc 1080

ctgataaccc aggacccatt acttctaggg taaggagggt ccaggagaca gaagctgagg 1140

aaaggtctga agaagtcaca tctgtcctgg ccagagggga aaaaccatca gatgctgaac 1200

caggagaatg ttgacccagg aaagggaccg aggacccaag aaaggagtca gaccaccagg 1260

gtttgcctga gaggaaggat caaggccccg agggaaagca gggctggctg catgtgcagg 1320

acactggtgg ggcatatgtg tcttagattc tccctgaatt cagtgtccct gccatggcca 1380

gactctctac tcaggcctgg acatgctgaa ataggacaat ggccttgtcc tctctcccca 1440

ccatttggca agagacataa aggacattcc aggacatgcc ttcctgggag gtccaggttc 1500

tctgtctcac acctcaggga ctgtagttac tgcatcagcc atggtaggtg ctgatctcac 1560

ccagcctgtc caggcccttc cactctccac tttgtgacca tgtccaggac cacccctcag 1620

atcctgagcc tgcaaatacc cccttgctgg gtgggtggat tcagtaaaca gtgagctcct 1680

atccagcccc gagagccacc tctgtcacct tcctgctggg catcatccca ccttcacaag 1740

cactaaagag catggggaga cctggctagc tgggtttctg catcacaaag aaaataatcc 1800

cccaggttcg gattcccagg gctctgtatg tggagctgac agacctgagg ccaggagata 1860

gcagaggtca gccctaggga gggtgggtca tccacccagg ggacaggggt gcaccagcct 1920

tgctactgaa agggcctccc caggacagcg ccatcagccc tgcctgagag ctttgctaaa 1980

cagcagtcag aggaggccat ggcagtggct gagctcctgc tccaggcccc aacagaccag 2040

accaacagca caatgcagtc cttccccaac gtcacaggtc accaaaggga aactgaggtg 2100

ctacctaacc ttagagccat caggggagat aacagcccaa tttcccaaac aggccagttt 2160

caatcccatg acaatgacct ctctgctctc attcttccca aaataggacg ctgattctcc 2220

cccaccatgg atttctccct tgtcccggga gcctttctg ccccctatga tctgggcact 2280

cctgacacac acctcctctc tggtgacata tcagggtccc tcactgtcaa gcagtccaga 2340

caggacagaa ccttggacag cgcccatctc agcttcaccc ttcctccttc acagggttca 2400

gggcaaagaa taaatggcag aggccagtga gcccagagat ggtgacaggc agtgacccag 2460

gggcagatgc ctggagcagg agctggcggg gccacaggga gaaggtgatg caggaaggga 2520

aacccagaaa tgggcaggaa aggaggacac aggctctgtg gggctgcagc ccagggttgg 2580

actatgagtg tgaagccatc tcagcaagta aggccaggtc ccatgaacaa gagtgggagc 2640

acgtggcttc ctgctctgta tatggggtgg gggattccat gccccataga accagatggc 2700

cggggttcag atggagaagg agcaggacag gggatcccca ggataggagg accccagtgt 2760

ccccacccag gcaggtgact gatgaatggg catgcagggt cctcctgggc tgggctctcc 2820

ctttgtccct caggattcct tgaaggaaca tccggaagcc gaccacatct acctggtggg 2880

ttctggggag tccatgtaaa gccaggagct tgtgttgcta ggaggggtca tggcatgtgc 2940

tgggggcacc aaagagagaa acctgagggc aggcaggacc tggtctgagg aggcatggga 3000

gcccagatgg ggagatggat gtcaggaaag gctgccccat cagggagggt gatagcaatg 3060

gggggtctgt gggagtgggc acgtgggatt ccctgggctc tgccaagttc cctcccatag 3120

tcacaacctg gggacactgc ccatgaaggg gcgcctttgc ccagccagat gctgctggtt 3180

ctgcccatcc actaccctct ctgctccagc cactctgggt ctttctccag atgccctgga 3240

cagccctggc ctgggcctgt cccctgagag gtgttgggag aagctgagtc tctggggaca 3300

ctctcatcag agtctgaaag gcacatcagg aaacatccct ggtctccagg actaggcaat 3360

gaggaaaggg ccccagctcc tccctttccc actgagaggg tcgaccctgg gtggccacag 3420

tgacttctgc gtctgtccca gtcaccctga aaccacaaca aaaccccagc cccagaccct 3480

gcaggtacaa tacatgtggg gacagtctgt acccagggga agccagttct ctcttcctag 3540

gagaccgggc ctcagggctg tgccccgggc aggcgggggc agcacgtgcc tgtccttgag 3600

aactcgggac cttaagggtc tctgctctgt gaggcacagc aaggatcctt ctgtccagag 3660

atgaaagcag ctcctgcccc tcctctgacc tcttcctcct tcccaaatct caaccaacaa 3720

ataggtgttt caaatctcat catcaaatct tcatccatcc acatgagaaa gcttaaaacc 3780

caatggattg acaacatcaa gagttggaac aagtggacat ggagatgtta cttgtggaaa 3840

tttagatgtg ttcagctatc gggcaggaga atctgtgtca aattccagca tggttcagaa 3900

ggaatcaaaaa gtgtcacagt ccaaatgtgc aacagtgcag gggataaaac tgtggtgcat 3960

ttcaaactgag ggatattttg gaacatgaga aaggaaggga ttgctgctgc acagaacatg 4020

ggatgatctca cacatagagt tgaaagaaag gagtcaatcg cagaatagaa aatgatcact 4080

aaattccacct ctataaagtt tccaagagga aaacccaatt ctgctgctag agatcagaat 4140

ggaggtgacc tgtgccttgc aatggctgtg agggtcacgg gagtgtcact tagtgcaggc 4200

aatgtgccgt atcttaatct gggcagggct ttcatgagca cataggaatg cagacattac 4260

tgctgtgttc attttacttc accggaaaag aagaataaaa tcagccgggc gcggtggctc 4320

acgcctgtaa tcccagcact ttagaaggct gaggtgggca gattacttga ggtcaggagt 4380

tcaagaccac cctggccaat atggtgaaac cccggctcta ctaaaaatac aaaaattagc 4440

tgggcatggt ggtgcgcgcc tgtaatccca gctactcggg aggctgaggc tggacaattg 4500

cttggaccca ggaagcagag gttgcagtga gccaagattg tgccactgca ctccagcttg 4560

ggcaacagag ccagactctg taaaaaaaaa aaaaaaaaaa aaaaaaagaa agaaagaaaa 4620

agaaaagaaa gtataaaatc tctttgggtt aacaaaaaaa gatccacaaa acaaacacca 4680

gctcttatca aacttacaca actctgccag agaacaggaa acacaaatac tcattaactc 4740

acttttgtgg caataaaacc ttcatgtcaa aaggagacca ggacacaatg aggaagtaaa 4800

actgcaggcc ctacttgggt gcagagaggg aaaatccaca aataaaacat taccagaagg 4860

agctaagatt tactgcattg agttcattcc ccaggtatgc aaggtgattt taacacctga 4920

aaatcaatca ttgcctttac tacatagaca gattagctag aaaaaaatta caactagcag 4980

aacagaagca atttggcctt cctaaaattc cacatcatat catcatgatg gagacagtgc 5040

agacgccaat gacaataaaa agagggacct ccgtcacccg gtaaacatgt ccacacagct 5100

ccagcaagca eccgtcttcc cagtgaatca ctgtaacctc ccctttaatc agccccaggc 5160

aaggctgcct gcgatggcca cacaggctcc aacccgtggg cctcaacctc ccgcagaggc 5220

tctcctttgg ccaccccatg gggagagcat gaggacaggg cagagccctc tgatgcccac 5280

acatggcagg agctgacgcc agagccatgg gggctggaga gcagagctgc tggggtcaga 5340

gcttcctgag gacacccagg cctaagggaa ggcagctccc tggatggggg caaccaggct 5400

ccgggctcca acctcagagc ccgcatggga ggagccagca ctctaggcct ttcctagggt 5460

gactctgagg ggaccctgac acgacaggat cgctgaatgc acccgagatg aaggggccac 5520

cacgggaccc tgctctcgtg gcagatcagg agagagtggg acaccatgcc aggccccccat 5580

ggcatggctg cgactgaccc aggccactcc cctgcatgca tcagcctcgg taagtcacat 5640

gaccaagccc aggaccaatg tggaaggaag gaaacagcat ccccctttagt gatggaaccc 5700

aaggtcagtg caaagagagg ccatgagcag ttaggaaggg tggtccaacc tacagcacaa 5760

accatcatct atcataagta gaagccctgc tccatgaccc ctgcatttaa ataaacgttt 5820

gttaaatgag tcaaattccc tcaccatgag agctcacctg tgtgtaggcc catcacacac 5880

acaaacacac acacacacac acacacacac acacacacac acagggaaag tgcaggatcc 5940

tggacagcac caggcaggct tcacaggcag agcaaacagc gtgaatgacc catgcagtgc 6000

cctgggcccc atcagctcag agaccctgtg agggctgaga tggggctagg caggggagag 6060

acttagagag ggtggggcct ccagggaggg ggctgcaggg agctgggtac tgccctccag 6120

ggaggggget gcagggagct gggtactgcc ctccagggag ggggctgcag ggagctgggt 6180

actgccctcc agggaggggg ctgcagggag ctgggtactg ccctccaggg agggggctgc 6240

agggagctgg gtactgccct ccagggaggc aggagcactg ttcccaacag agagcacatc 6300

ttcctgcagc agctgcacag acacaggagc ccccatgact gccctgggcc agggtgtgga 6360

ttccaaattt cgtgccccat tgggtgggac ggaggttgac cgtgacatcc aaggggcatc 6420

tgtgattcca aacttaaact actgtgccta caaaatagga aataacccta ctttttctac 6480

tatctcaaat tccctaagca caagctagca ccctttaaat caggaagttc agtcactcct 6540

ggggtcctcc catgccccca gtctgacttg caggtgcaca gggtggctga catctgtcct 6600

tgctcctcct cttggctcaa ctgccgcccc tcctgggggt gactgatggt caggacaagg 6660

gatcctagag ctggccccat gattgacagg aaggcaggac ttggcctcca ttctgaagac 6720

taggggtgtc aagagagctg ggcatcccac agagctgcac aagatgacgc ggacagaggg 6780

tgacacaggg ctcagggctt cagacgggtc gggaggctca gctgagagtt cagggacaga 6840

cctgaggagc ctcagtggga aaagaagcac tgaagtggga agttctggaa tgttctggac 6900

aagcctgagt gctctaagga aatgctccca ccccgatgta gcctgcagca ctggacggtc 6960

tgtgtacctc cccgctgccc atcctctcac agcccccgcc tctagggaca caactcctgc 7020

cctaacatgc atctttcctg tctcattcca cacaaaaggg cctctggggt ccctgttctg 7080

cattgcaagg agtggaggtc acgttcccac agaccaccca gcaacagggt cctatggagg 7140

tgcggtcagg aggatcacac gtcccccat gcccagggga ctgactctgg gggtgatgga 7200

ttggcctgga ggccactggt cccctctgtc cctgagggga atctgcaccc tggaggctgc 7260

cacatccctc ctgattcttt cagctgaggg cccttcttga aatcccaggg aggactcaac 7320

ccccactggg aaaggcccag tgtggacggt tccacagcag cccagctaag gcccttggac 7380

acagatcctg agtgagagaa cctttaggga cacaggtgca cggccatgtc cccagtgccc 7440

acacagagca ggggcatctg gaccctgagt gtgtagctcc cgcgactgaa cccagccctt 7500

ccccaatgac gtgacccctg gggtggctcc aggtctccag tccatgccac caaaatctcc 7560

agattgaggg tcctcccttg agtccctgat gcctgtccag gagctgcccc ctgagcaaat 7620

ctagagtgca gagggctggg attgtggcag taaaagcagc cacatttgtc tcaggaagga 7680

aagggaggac atgagctcca ggaagggcga tggcgtcctc tagtgggcgc ctcctgttaa 7740

tgagcaaaaa ggggccagga gagttgagag atcagggctg gccttggact aaggctcaga 7800

tggagaggac tgaggtgcaa agaggggggct gaagtagggg agtggtcggg agagatggga 7860

ggagcaggta aggggaagcc ccagggaggc cgggggaggg tacagcagag ctctccactc 7920

ctcagcattg acatttgggg tggtcgtgct agtggggttc tgtaagttgt agggtgttca 7980

gcaccatctg gggactctac ccactaaatg ccagcaggac tccctcccca agctctaaca 8040

accaacaatg tctccagact ttccaaatgt cccctggaga gcaaaattgc ttctggcaga 8100

atcactgatc tacgtcagtc tctaaaagtg actcatcagc gaaatccttc acctcttggg 8160

agaagaatca caagtgtgag aggggtagaa actgcagact tcaaaatctt tccaaaagag 8220

ttttacttaa tcagcagttt gatgtcccag gagaagatac atttagagtg tttagagttg 8280

atgccacatg gctgcctgta cctcacagca ggagcagagt gggttttcca agggcctgta 8340

accacaactg gaatgacact cactgggtta cattacaaag tggaatgtgg ggaattctgt 8400

agactttggg aagggaaatg tatgacgtga gcccacagcc taaggcagtg gacagtccac 8460

tttgaggctc tcaccatcta ggagacatct cagccatgaa catagccaca tctgtcatta 8520

gaaaacatgt-tttattaaga ggaaaaatct aggctagaag tgctttatgc tctttttttct 8580

ctttatgttc aaattcatat acttttagat cattccttaa agaagaatct atccccctaa 8640

gtaaatgtta tcactgactg gatagtgttg gtgtctcact cccaacccct gtgtggtgac 8700

agtgccctgc ttccccagcc ctgggccctc tctgattcct gagagctttg ggtgctcctt 8760

cattaggagg aagagaggaa gggtgttttt aatattctca ccattcaccc atccacctct 8820

tagacactgg gaagaatcag ttgcccactc ttggatttga tcctcgaatt aatgacctct 8880

atttctgtcc cttgtccatt tcaacaatgt gacaggccta agaggtgcct tctccatgtg 8940

atttttgagg agaaggttct caagataagt tttctcacac ctctttgaat tacctccacc 9000

tgtgtcccca tcaccattac cagcagcatt tggacccttt ttctgttagt cagatgcttt 9060

ccacctcttg agggtgtata ctgtatgctc tctacacagg aatatgcaga ggaaatagaa 9120

aaagggaaat cgcattacta ttcagagaga agaagacctt tatgtgaatg aatgagagtc 9180

taaaatccta agagagccca tataaaatta ttaccagtgc taaaactaca aaagttacac 9240

taacagtaaa ctagaataat aaaacatgca tcacagttgc tggtaaagct aaatcagata 9300

ttttttttctt agaaaaagca ttccatgtgt gttgcagtga tgacaggagt gcccttcagt 9360

caatatgctg cctgtaattt ttgttccctg gcagaatgta ttgtcttttc tcccctttaaa 9420

tcttaaatgc aaaactaaag gcagctcctg ggcccccctcc ccaaagtcag ctgcctgcaa 9480

ccagccccac gaagagcaga ggcctgagct tccctggtca aaatagggggg ctagggagct 9540

taaccttgct cgataaagct gtgttcccag aatgtcgctc ctgttcccag gggcaccagc 9600

ctggagggtg gtgagcctca ctggtggcct gatgcttacc ttgtgccctc acaccagtgg 9660

tcactggaac cttgaacact tggctgtcgc ccggatctgc agatgtcaag aacttctgga 9720

agtcaaatta ctgcccactt ctccagggca gatacctgtg aacatccaaa accatgccac 9780

agaaccctgc ctggggtcta caacacatat ggactgtgag caccaagtcc agccctgaat 9840

ctgtgaccac ctgccaagat gcccctaact gggatccacc aatcactgca catggcaggc 9900

agcgaggctt ggaggtgctt cgccacaagg cagccccaat ttgctgggag tttcttggca 9960

cctggtagtg gtgaggagcc ttgggaccct caggattact ccccttaagc atagtgggga 10020

cccttctgca tccccagcag gtgccccgct cttcagagcc tctctctctg aggtttaccc 10080

agacccctgc accaatgaga ccatgctgaa gcctcagaga gagagatgga gctttgacca 10140

ggagccgctc ttccttgagg gccagggcag ggaaagcagg aggcagcacc aggagtggga 10200

acaccagtgt ctaagcccct gatgagaaca gggtggtctc tcccatatgc ccataccagg 10260

cctgtgaaca gaatcctcct tctgcagtga caatgtctga gaggacgaca tgtttcccag 10320

cctaacgtgc agccatgccc atctacccac tgcctactgc aggacagcac caacccagga 10380

gctgggaagc tgggagaaga catggaatac ccatggcttc tcaccttcct ccagtccagt 10440

gggcaccatt tatgcctagg acacccacct gccggcccca ggctcttaag agttaggtca 10500

cctaggtgcc tctgggaggc cgaggcagga gaattgcttg aacccgggag gcagaggttg 10560

cagtgagccg agatcacacc actgcactcc agcctgggtg acagaatgag actctgtctc 10620

aaaaaaaaag agaaagatag catcagtggc taccaagggc taggggcagg ggaaggtgga 10680

gagttaatga ttaatagtat gaagtttcta tgtgagatga tgaaaatgtt ctggaaaaaa 10740

aaatatagtg gtgaggatgt agaatattgt gaatataatt aacggcattt aattgtacac 10800

ttaacatgat taatgtggca tattttatct tatgtatttg actacatcca agaaacactg 10860

ggagagggaa agcccaccat gtaaaataca cccaccctaa tcagatagtc ctcattgtac 10920

ccaggtacag gcccctcatg acctgcacag gaataactaa ggatttaagg acatgaggct 10980

tcccagccaa ctgcaggtgc acaacataaa tgtatctgca aacagactga gagtaaagct 11040

ggggggcacaa acctcagcac tgccaggaca cacacccttc tcgtggattc tgactttatc 11100

tgacccggcc cactgtccag atcttgttgt gggattggga caagggaggt cataaagcct 11160

gtccccaggg cactctgtgt gagcacacga gacctccccа ccccccccacc gttaggtctc 11220

cacacataga tctgaccatt aggcattgtg aggaggactc tagcgcgggc tcagggatca 11280

caccagagaa tcaggtacag agaggaagac ggggctcgag gagctgatgg atgacacaga 11340

gcagggttcc tgcagtccac aggtccagct caccctggtg taggtgcccc atccccctga 11400

tccaggcatc cctgacacag ctcccctccg gagcctcctc ccaggtgaca catcagggtc 11460

cctcactcaa gctgtccaga gagggcagca ccttggacag cgcccacccc acttcactct 11520

tcctccctca cagggctcag ggctcagggc tcaagtctca gaacaaatgg cagaggccag 11580

tgagcccaga gatggtgaca gggcaatgat ccaggggcag ctgcctgaaa cgggagcagg 11640

tgaagccaca gatgggagaa gatggttcag gaagaaaaat ccaggaatgg gcaggagagg 11700

agaggaggac acaggctctg tggggctgca gcccaggatg ggactaagtg tgaagacatc 11760

tcagcaggtg aggccaggtc ccatgaacag agaagcagct cccacctccc ctgatgcacg 11820

gacacacaga gtgtgtggtg ctgtgccccc agagtcgggc tctcctgttc tggtccccag 11880

ggagtgagaa gtgaggttga cttgtccctg ctcctctctg ctaccccaac attcaccttc 11940

tcctcatgcc cctctctctc aaatatgatt tggatctatg tccccgccca aatctcatgt 12000

caaattgtaa accccaatgt tggaggtggg gccttgtgag aagtgattgg ataatgcggg 12060

tggattttct gctttgatgc tgtttctgtg atagagatct cacatgatct ggttgtttaa 12120

aagtgtgtag cacctctccc ctctctctct ctctctctta ctcatgctct gccatgtaag 12180

acgttcctgt ttcccccttca ccgtccagaa tgattgtaag ttttctgagg cctccccagg 12240

agcagaagcc actatgcttc ctgtacaact gcagaatgat gagcgaatta aacctctttt 12300

ctttataaat tacccagtct caggtatttc tttatagcaa tgcgaggaca gactaataca 12360

atcttctact cccagatccc cgcacacgct tagccccaga catcactgcc cctgggagca 12420

tgcacagcgc agcctcctgc cgacaaaagc aaagtcacaa aaggtgacaa aaatctgcat 12480

ttggggacat ctgattgtga aagagggagg acagtacact tgtagccaca gagactgggg 12540

ctcaccgagc tgaaacctgg tagcactttg gcataacatg tgcatgaccc gtgttcaatg 12600

tctagagatc agtgttgagt aaaacagcct ggtctggggc cgctgctgtc cccacttccc 12660

tcctgtccac cagagggcgg cagagttcct cccaccctgg agcctcccca ggggctgctg 12720

acctccctca gccgggccca cagcccagca gggtccaccc tcacccgggt cacctcggcc 12780

cacgtcctcc tcgccctccg agctcctcac acggactctg tcagctcctc cctgcagcct 12840

atcggccgcc cacctgaggc ttgtcggccg cccacttgag gcctgtcggc tgccctctgc 12900

aggcagctcc tgtcccctac accccctcct tccccgggct cagctgaaag ggcgtctccc 12960

agggcagctc cctgtgatct ccaggacagc tcagtctctc acaggctccg acgcccccta 13020

tgctgtcacc tcacagccct gtcattacca ttaactcctc agtcccatga agttcactga 13080

gcgcctgtct cccggttaca ggaaaactct gtgacaggga ccacgtctgt cctgctctct 13140

gtggaatccc agggcccagc ccagtgcctg acacggaaca gatgctccat aaatactggt 13200

taaatgtgtg ggagatctct aaaaagaagc atatcacctc cgtgtggccc ccagcagtca 13260

gagtctgttc catgtggaca caggggcact ggcaccagca tgggaggagg ccagcaagtg 13320

cccgcggctg ccccaggaat gaggcctcaa cccccagagc ttcagaaggg aggacagagg 13380

cctgcaggga atagatcctc cggcctgacc ctgcagccta atccagagtt cagggtcagc 13440

tcacaccacg tcgaccctgg tcagcatccc tagggcagtt ccagacaagg ccggaggtct 13500

cctcttgccc tccagggggt gacattgcac acagacatca ctcaggaaac ggattccccc 13560

ggacacgaac ctggctttgc taaggaagtg gaggtggagc ctggtttcca tcccttgctc 13620

caacagaccc ttctgatctc tcccacatac ctgctctgtt cctttctcgg tcctatgagg 13680

accctgttct gccaggggtc cctgtgcaac tccagactcc ctcctggtac caccatgggg 13740

aaggtggggt gatcacagga cagtcagcct cgcagagaca gagaccaccc aggactgtca 13800

gggagaacat ggacaggccc tgagccgcag ctcagccaac agacacggag agggagggtc 13860

cccctggagc cttccccaag gacagcagag cccagagtca cccacctccc tccaccacag 13920

tcctctcttt ccaggacaca caagacacct cccctccac atgcaggatc tggggactcc 13980

tgagacctct gggcctgggt ctccatccct gggtcagtgg cggggttggt ggtactggag 14040

acagagggct ggtccctccc cagccaccac ccagtgagcc tttttctagc ccccagagcc 14100

acctctgtca ccttcctgtt gggcatcatc ccaccttccc agagccctgg agagcatggg 14160

gagacccggg accctgctgg gtttctctgt cacaaaggaa aataatcccc ctggtgtgac 14220

agacccaagg acagaacaca gcagaggtca gcactgggga agacaggttg tcctcccagg 14280

ggatggggt ccatccacct tgccgaaaag atttgtctga ggaactgaaa atagaaggga 14340

aaaaagagga gggacaaaag aggcagaaat gagaggggag gggacagagg acacctgaat 14400

aaagaccaca cccatgaccc acgtgatgct gagaagtact cctgccctag gaagagactc 14460

↱ transcription start site

agggcagagg gaggaaggac agcagaccag acagtcacag cagccttgac aaaacgttcc 14520

tggaactcaa gctcttctcc acagaggagg acagagcaga cagcagagac catggagtct 14580

ccctcggccc ctccccacag atggtgcatc ccctggcaga ggctcctgct cacaggtgaa 14640

gggaggacaa cctgggagag ggtgggagga gggagctggg gtctcctgcg taggacaggg 14700

ctgtgagacg gacagagggc tcctgttgga gcctgaatag ggaagaggac atcagagagg 14760

gacaggagtc acaccagaaa aatcaaattg aactggaatt ggaaaggggc aggaaaacct 14820

caagagttct attttcctag ttaattgtca ctggccacta cgtttttaaa aatcataata 14880

actgcatcag atgacacttt aaataaaaac ataaccaggg catgaaacac tgtcctcatc 14940

cgcctaccgc ggacattgga aaataagccc caggctgtgg agggccctgg gaaccctcat 15000

gaactcatcc acaggaatct gcagcctgtc ccaggcactg gggtgcaacc aagatc 15056

Mucin-TRE SEQ ID NO:__

cgagcggccc ctcagcttcg gcgcccagcc ccgcaaggct cccggtgacc actagagggc 60

gggaggagct cctggccagt ggtggagagt ggcaaggaag gaccctaggg ttcatcggag 120

cccaggttta ctcccttaag tggaaatttc ttcccccact cctccttggc tttctccaag 180

gagggaaccc aggctgctgg aaagtccggc tggggcgggg actgtgggtt caggggagaa 240

cggggtgtgg aacgggacag ggagcggtta gaagggtggg gctattccgg gaagtggtgg 300

ggggagggag cccaaaacta gcacctagtc cactcattat ccagccctct tatttctcgg 360

ccgctctgct tcagtggacc cggggagggc ggggaagtgg agtgggagac ctaggggtgg 420

gcttcccgac cttgctgtac aggacctcga cctagctggc tttgttcccc atccccacgt 480

tagttgttgc cctgaggcta aaactagagc ccaggggccc caagttccag actgcccctc 540

cccccctccc cggagccagg gagtggttgg tgaaaggggg aggccagctg gagaacaaac 600

gggtagtcag ggggttgagc gattagagcc cttgtaccct acccaggaat ggttggggag 660

gaggaggaag aggtaggagg taggggaggg ggcggggttt tgtcacctgt cacctgctcg 720

ctgtgcctag ggcgggcggg cggggagtgg ggggaccggt ataaagcggt aggcgcctgt 780

gcccgctcca cctctcaagc agccagcgcc tgcctgaatc tgttctgccc cctccccacc 840

catttcacca ccaccatg 858

αFP-TRE SEQ ID NO:__

gaattcttag aaatatgggg gtaggggtgg tggtggtaat tctgttttca ccccataggt 60

gagataagca ttgggttaaa tgtgctttca cacacacatc acatttcata agaattaagg 120

aacagactat gggctggagg actttgagga tgtctgtctc ataacacttg ggttgtatct 180

gttctatggg gcttgtttta agcttggcaa cttgcaacag ggttcactga ctttctcccc
240

aagcccaagg tactgtcctc ttttcatatc tgttttgggg cctctggggc ttgaatatct
300

gagaaaatat aaacatttca ataatgttct gtggtgagat gagtatgaga gatgtgtcat
360

tcatttgtat caatgaatga atgaggacaa ttagtgtata aatccttagt acaacaatct
420

gagggtaggg gtggtactat tcaatttcta tttataaaga tacttatttc tatttattta
480

tgcttgtgac aaatgttttg ttcgggacca caggaatcac aaagatgagt ctttgaattt
540

aagaagttaa tggtccagga ataattacat agcttacaaa tgactatgat ataccatcaa
600

acaagaggtt ccatgagaaa ataatctgaa aggtttaata agttgtcaaa ggtgagaggg
660

ctcttctcta gctagagact aatcagaaat acattcaggg ataattattt gaatagacct
720

taagggttgg gtacattttg ttcaagcatt gatggagaag gagagtgaat atttgaaaac
780

attttcaact aaccaaccac ccaatccaac aaacaaaaaa tgaaaagaat ctcagaaaca
840

gtgagataag agaaggaatt ttctcacaac ccacacgtat agctcaactg ctctgaagaa
900

gtatatatct aatatttaac actaacatca tgctaataat gataataatt actgtcattt
960

tttaatgtct ataagtacca ggcatttaga agatattatt ccatttatat atcaaaataa
1020

acttgagggg atagatcatt ttcatgatat atgagaaaaa ttaaaaacag attgaattat
1080

ttgcctgtca tacagctaat aattgaccat aagacaatta gatttaaatt agttttgaat
1140

ctttctaata ccaaagttca gtttactgtt ccatgttgct tctgagtggc ttcacagact
1200

tatgaaaaag taaacggaat cagaattaca tcaatgcaaa agcattgctg tgaactctgt
1260

acttaggact aaactttgag caataacaca catagattga ggattgtttg ctgttagcat
1320

acaaactctg gttcaaagct cctctttatt gcttgtcttg gaaaatttgc tgttcttcat
1380

ggtttctctt ttcactgcta tctatttttc tcaaccactc acatggctac aataactgtc
1440

tgcaagctta tgattcccaa atatctatct ctagcctcaa tcttgttcca gaagataaaa
1500

agtagtattc aaatgcacat caacgtctcc acttggaggg cttaaagacg tttcaacata
1560

caaaccgggg agttttgcct ggaatgtttc ctaaaatgtg tcctgtagca catagggtcc
1620

tcttgttcct taaaatctaa ttacttttag cccagtgctc atcccaccta tggggagatg
1680

agagtgaaaa gggagcctga ttaataatta cactaagtca ataggcatag agccaggact
1740

gtttgggtaa actggtcact ttatcttaaa ctaaatatat ccaaaactga acatgtactt
1800

agttactaag tctttgactt tatctcattc ataccactca gctttatcca ggccacttat
1860

ttgacagtat tattgcgaaa acttcctaac tggtctcctt atcatagtct tatccccttt
1920

tgaaacaaaa gagacagttt caaaatacaa atatgatttt tattagctcc cttttgttgt
1980

ctataatagt cccagaagga gttataaact ccatttaaaa agtctttgag atgtggccct
2040

tgccaacttt gccaggaatt cccaatatct agtattttct actattaaac tttgtgcctc
2100

ttcaaaactg cattttctct cattccctaa gtgtgcattg ttttccctta ccggttggtt
2160

tttccaccac cttttacatt ttcctggaac actataccct ccctcttcat ttggcccacc
2220

tctaattttc tttcagatct ccatgaagat gttacttcct ccaggaagcc ttatctgacc
2280

cctccaaaga tgtcatgagt tcctcttttc attctactaa tcacagcatc catcacacca
2340

tgttgtgatt actgatacta ttgtctgttt ctctgattag gcagtaagct caacaagagc
2400

tacatggtgc ctgtctcttg ttgctgatta ttcccatcca aaaacagtgc ctggaatgca
2460

gacttaacat tttattgaat gaataaataa aaccccatct atcgagtgct actttgtgca
2520

agacccggtt ctgaggcatt tatatttatt gatttattta attctcattt aaccatgaag
2580

gaggtactat cactatcctt attttatagt tgataaagat aaagcccaga gaaatgaatt
2640

aactcaccca aagtcatgta gctaagtgac agggcaaaaa ttcaaaccag ttccccaact
2700

ttacgtgatt aatactgtgc tatactgcct ctctgatcat atggcatgga atgcagacat
2760

ctgctccgta aggcagaata tggaaggaga ttggaggatg acacaaaacc agcataatat
2820

cagaggaaaa gtccaaacag gacctgaact gatagaaaag ttgttactcc tggtgtagtc
2880

gcatcgacat cttgatgaac tggtggctga cacaacatac attggcttga tgtgtacata
2940

ttatttgtag ttgtgtgtgt atttttatat atatatttgt aatattgaaa tagtcataat
3000

ttactaaagg cctaccattt gccaggcatt tttacatttg tcccctctaa tcttttgatg
3060

agatgatcag attggattac ttggccttga agatgatata tctacatcta tatctatatc
3120

tatatctata tctatatcta tatctatatc tatatctata tatgtatatc agaaaagctg
3180

aaatatgttt tgtaaagtta taaagatttc agactttata gaatctggga tttgccaaat
3240

gtaacccctt tctctacatt aaacccatgt tggaacaaat acatttatta ttcattcatc
3300

aaatgttgct gagtcctggc tatgaaccag acactgtgaa agcctttggg atattttgcc
3360

catgcttggg caagcttata tagtttgctt cataaaactc tatttcagtt cttcataact
3420

aatacttcat gactattgct tttcaggtat tccttcataa caaatacttt ggctttcata
3480

tatttgagta aagtcccccc tgaggaagag tagaagaact gcactttgta aatactatcc
3540

tggaatccaa acggatagac aaggatggtg ctacctcttt ctggagagta cgtgagcaag
3600

gcctgttttg ttaacatgtt ccttaggaga caaaacttag gagagacacg catagcagaa
3660

aatggacaaa aactaacaaa tgaatgggaa ttgtacttga ttagcattga agaccttgtt
3720

tatactatga taaatgtttg tatttgctgg aagtgctact gacggtaaac ccttttgtt
3780

taaatgtgtg ccctagtagc ttgcagtatg atctattttt taagtactgt acttagctta
3840

tttaaaaatt ttatgtttaa aattgcatag tgctctttca ttgaagaagt tttgagagag
3900

agatagaatt aaattcactt atcttaccat ctagagaaac ccaatgttaa aactttgttg
3960

tccattattt ctgtctttta ttcaacattt tttttagagg gtgggaggaa tacagaggag
4020

gtacaatgat acacaaatga gagcactctc catgtattgt tttgtcctgt ttttcagtta
4080

acaatatatt atgagcatat ttccatttca ttaaatattc ttccacaaag ttattttgat
4140

ggctgtatat cacctactt tatgaatgta ccatattaat ttatttcctg gtgtgggtta
4200

tttgatttta taatcttacc tttagaataa tgaaacacct gtgaagcttt agaaaatact
4260

ggtgcctggg tctcaactcc acagattctg atttaactgg tctgggttac agactaggca
4320

ttgggaattc aaaaagttcc cccagtgatt ctaatgtgta gccaagatcg ggaacccttg
4380

tagacaggga tgataggagg tgagccactc ttagcatcca tcatttagta ttaacatcat
4440

catcttgagt tgctaagtga atgatgcacc tgacccactt tataaagaca catgtgcaaa
4500

taaaattatt ataggacttg gtttattagg gcttgtgctc taagttttct atgttaagcc
4560

atacatcgca tactaaatac tttaaaatgt accttattga catacatatt aagtgaaaag
4620

tgtttctgag ctaaacaatg acagcataat tatcaagcaa tgataatttg aaatgaattt
4680

attattctgc aacttaggga caagtcatct ctctgaattt tttgtacttt gagagtattt
4740

gttatatttg caagatgaag agtctgaatt ggtcagacaa tgtcttgtgt gcctggcata
4800

tgataggcat ttaatagttt taaagaatta atgtatttag atgaattgca taccaaatct
4860

gctgtctttt ctttatggct tcattaactt aatttgagag aaattaatta ttctgcaact
4920

tagggacaag tcatgtcttt gaatattctg tagtttgagg agaatatttg ttatatttgc
4980

aaaataaaat aagtttgcaa gttttttttt tctgccccaa agagctctgt gtccttgaac
5040

ataaaataca aataaccgct atgctgttaa ttattggcaa atgtcccatt ttcaacctaa
5100

ggaaatacca taaagtaaca gatataccaa caaaaggtta ctagttaaca ggcattgcct
5160

gaaaagagta taaaagaatt tcagcatgat tttccatatt gtgcttccac cactgccaat
5220

aaca
5224